

ABSTRACT OF THE DISCLOSURE

A live center belt-drive uses a biasing moment to induce automatically adjusted and reoriented tensioning resultant force in a belt and pulley system. Embodiments have a motor mounted on a plate freely pivotably mounted to a frame of a device in which the tensioner is used. The motor is connected to a drive pulley and drives a driven pulley via a belt reeved about the drive and driven pulleys. A first biasing mechanism biases the drive pulley away from the driven pulley, thus providing the biasing moment M_{bias} . Embodiments use a linear spring providing a biasing force F_{bias} and mounted a distance d_{bias} from the pivot point to provide the biasing moment M_{bias} about the pivot point. Alternatively, embodiments use a torsion spring mounted about the pivot point to provide the biasing moment M_{bias} . Embodiments can also employ a second biasing mechanism to bias the driven pulley away from the drive pulley.